

²²⁵Ac Actinium-225 Chloride Radiochemical

Actinium-225 (Ac-225) is a powerful radioisotope used in targeted alpha therapies (TATs). This emerging class of therapy combines alpha-emitting radionuclides such as Ac-225 with tumor-seeking targeting vectors that selectively guide the isotope to cancer cells within the body. When the Ac-225 undergoes radioactive decay, it releases a highly concentrated and cytotoxic dose of alpha particles that can kill tumor cells.

BWXT Medical is actively collaborating with pharmaceutical companies to deliver high quality Ac-225 and other therapeutic isotopes to help advance these important new therapies.

Process Data

Target

Natural thorium as metal

Nuclear Reaction

$^{232}\text{Th}(p, x) ^{225}\text{Ra}(\beta, 14.92\text{d}) ^{225}\text{Ac}$

Product Specification

Half-Life

9.92 days

Appearance/Form

Solid Actinium trichloride
[²²⁵Ac]AcCl₃

Radionuclidic Identity

Most prominent gamma photons energies at
440 ± 2 keV (Bi-213) and
218 ± 2 keV (Fr-221)

Radionuclidic purity

@ Reference Date and Time¹

Ac-225 > 99.0 % (based on Fr-221 and Bi-213)

Ac-227 ≤ 0.0010 % (ICP-MS)

Radiochemical purity

Ac-225 ≥ 99% is present as ionic form

Others ≤ 1%

Specific Activity

No carrier added

Chemical Purity

< 0.025 µg /MBq²

Measured metal ion impurities
@ Reference Date and Time^{1,2}

Shelf-Life

20 days from Production Date

Primary packaging

V-Vial (3 mL or 5 mL)

Product Origin

Vancouver, Canada

¹Reference date and time is 3-days post production
²V, Cr, Mn, Co, Ni, Cu, Zr, La, Ce, Pr, Nd, Pb, Bi, Th, Ba

BWXT Medical Advantage



- Innovative process and production methods for high purity, no carrier-added (n.c.a.) Ac-225 (no Ac-227)
- Work closely with pharma and biotech customers on development, clinical and regulatory needs
- Shipping since 2022 for development and clinical trials of targeted alpha therapies (TATs)
- Weekly manufacturing and custom dispensing of Indium-111 Chloride for imaging pairing
- Expertise, infrastructure and distribution capabilities to support advancement and growth of these important therapies

Other BWXT Medical Products:

- Indium (In-111) Oxyquinoline Solution (US Only)
- Indium-111 Chloride Radiochemical Solution
- Iodine-123 Sodium Iodide Radiochemical
- Iodine-123 Sodium Iodide Oral Solution (Canada Only)
- Strontium-82 Chloride Radiochemical Solution
- Germanium-68 Chloride Radiochemical Solution

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INNOVATION DRIVEN >

BWXT Medical Ltd. provides its customers, who conduct life-saving medical procedures for patients around the world, the benefit of decades of experience in the development, processing, packaging and delivery of medical isotopes. Headquartered in Ottawa, Ontario, BWXT Medical employs approximately 300 highly-skilled people in Ottawa and Vancouver, British Columbia. BWXT Medical is part of the Commercial Operations segment of BWX Technologies, Inc. (NYSE:BWXT), headquartered in Lynchburg, Virginia, U.S.A. BWXT is a Fortune 1000 and Defense News Top 100 manufacturing and engineering innovator that provides safe and effective nuclear solutions for global security, clean energy, environmental restoration, nuclear medicine and space exploration. With approximately 8,700 employees, BWXT has 15 major operating sites in the U.S., Canada and the U.K. In addition, BWXT joint ventures provide management and operations at a dozen U.S. Department of Energy and NASA facilities. Follow us on LinkedIn, X, Facebook and Instagram, and learn more at www.bwxt.com.

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